Problem A:

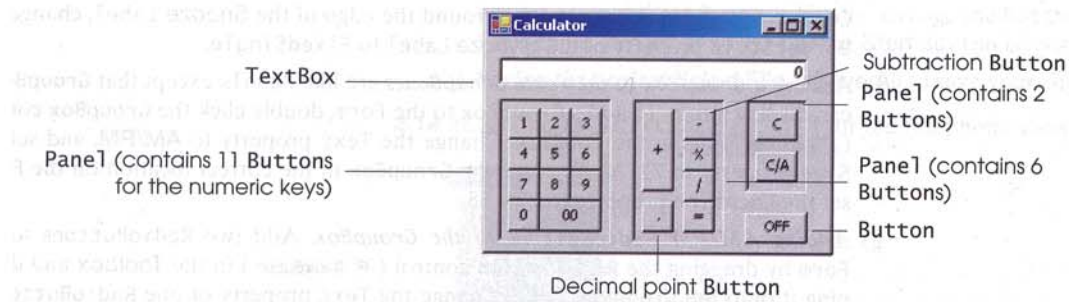**Figure 3.33** Calculator GUI.

Because you are creating only GUIs, your applications will not be fully
operational. For example, the **Calculator** GUI in Exercise 3.11 will not behave like a
calculator when its Buttons are clicked. You will learn how to make your applica-
tions fully operational in later tutorials. Create each application as a separate project.

3.11 *(Calculator GUI)* Create the GUI for the calculator shown in Fig. 3.33.

a) *Creating a new project.* Create a new **Windows Application** named Calculator.

b) *Renaming the Form file.* Name the Form file Calculator.vb.

c) *Manipulating the Form's properties.* Change the Size property of the Form to 272,
192. Change the Text property of the Form to Calculator. Change the Font prop-
erty to Tahoma.

d) *Adding a TextBox to the Form.* Add a TextBox control by double clicking it in the
Toolbox. A TextBox control is used to enter input into applications. Set the Text-
Box's Text property in the **Properties** window to 0. Change the Size property to
240, 21. Set the TextAlign property to Right; this right aligns text displayed in the
TextBox. Finally, set the TextBox's Location property to 8, 16.

e) *Adding the first Panel to the Form.* Panel controls are used to group other controls.
Double click the Panel icon (☐ Panel) in the **Toolbox** to add a Panel to the
Form. Change the Panel's BorderStyle property to Fixed3D to make the inside of
the Panel appear recessed. Change the Size property to 88, 112. Finally, set the
Location property to 8, 48. This Panel contains the calculator's numeric keys.

f) *Adding the second Panel to the Form.* Click the Form. Double click the Panel icon in
the **Toolbox** to add another Panel to the Form. Change the Panel's BorderStyle
property to Fixed3D. Change the Size property to 72, 112. Finally, set the Location
property to 112, 48. This Panel contains the calculator's operator keys.

g) *Adding the third (and last) Panel to the Form.* Click the Form. Double click the
Panel icon in the **Toolbox** to add another Panel to the Form. Change the Panel's
BorderStyle property to Fixed3D. Change the Size property to 48, 72. Finally, set
the Location property to 200, 48. This Panel contains the calculator's **C** (clear) and
C/A (clear all) keys.

h) *Adding Buttons to the Form.* There are 20 Buttons on the calculator. To add a But-
ton to a Panel, double click the Button control (ab| Button) in the **Toolbox**.
Then add the Button to the Panel by dragging and dropping it on the Panel. Change
the Text property of each Button to the calculator key it represents. The value you
enter in the Text property will appear on the face of the Button. Finally, resize the
Buttons, using their Size properties. Each Button labelled 0–9, x, /, -, = and .
should have a size of 24, 24. The **00** and **OFF** Buttons have size 48, 24. The **+** Button
is sized 24, 64. The **C** (clear) and **C/A** (clear all) Buttons are sized 32, 24.

i) *Saving the project.* Select **File > Save All** to save your changes.